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ABSTRACT

An exploratory study was conducted to define broadly some indices of student writing development. Student essays prepared by high school seniors and third-year university students outside the classroom were collected for analysis. The essays were drawn from four disciplines--English literature, history, geography, and biology--and represented the range of student writing in those classes (two essays for each grade of "A" through "F" when possible). A syntactic instrument, a rhetorical scale, and a cognitive measure were used to analyze and compare the essays. Development proved the most significant factor in determining grade although in simple correlations with grade all the other rhetorical criteria correlated directly as well. In contrast, there was no significant relationship between level of abstracting and grade. There proved to be no significant correlation between grade level and any of the rhetorical criteria except register, indicating that college work was no more organized, developed, or coherent than the high school essays. In contrast, the level of abstracting did correlate significantly with grade level. Thus, the instructors' marks correlated directly with performance on traditional rhetorical criteria but not with the level of abstracting, the cognitive index. (RL)

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Writing in the College Years: Some Indices of Growth

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To a large extent, composition has only recently become a subject of formal research, and in no aspect of the study of composition is this more true than in the study of the development of writing abilities. To be more than trivial, such research requires a broader conception of the writing process than the skills model which dominated thinking about composition for so long. Now, however, there are several seminal studies underway or just completed which focus on growth in writing. The most significant of these are the Britton et al. research in London, Wilkinson's work at Exeter, the Bereiter-Scardamalia project in Toronto, and the Graves team's research in New Hampshire. All these studies, however, have focused on pupils in elementary or secondary school; with the partial and limited exception of studies of the effects of sentence combining instruction on syntactic complexity scores, development in the college years has hardly been investigated. Given that these years of late adolescence and early adulthood are a time of extraordinary intellectual and psychological growth, one would surely expect that writing abilities, which draw on cognitive skills and psychological resources, would show similar development at this time. Such, in any event, is the assumption that has prompted the research that we have undertaken at Carleton University, Ottawa--a

long-term longitudinal project exploring the nature of development in writing in the college years.

As a first step, we conducted a preliminary exploratory study in order to define broadly some indices of growth and to test and refine our measures for describing the writing and its development. The results of this initial research were suggestive, with implications both for further research as well as for pedagogic practice, and it is some of these early and somewhat tentative findings that we will be describing here.

For this preliminary project, we decided to analyse and compare the written work of students in last year high school, which in Ontario is grade thirteen, with that of third year university students. Since the methodology of our research was somewhat unconventional, and deliberately so, and since our instruments of analysis were either original or idiosyncratic, a good part of this report will consist of an exposition of our procedures.

Our first decision was to break with conventional experimental practice in obtaining the writing samples: we chose not to elicit essays written on a set theme in a controlled setting. The attractions of eliciting writing in such carefully controlled circumstances are great. There is no possibility of plagiarism, nor of outside intervention of any kind; the writing can be made to be more uniform by assigning a common topic and a common mode;

and, superficially at least, the external circumstances can be made to seem identical for all students.

Some of these advantages, of course, are illusory. For example, by insisting that all students write at the same time and in the same place, we are not in fact giving them all equal opportunities: we are favouring those who feel good that day, those who are not inhibited in their writing behaviours by the presence of others, perhaps those who have been better prepared for such tasks by their previous school experience, and certainly those who can write a whole piece at one sitting.

Moreover, whatever advantages do exist seem to us to be outweighed by one major disadvantage. When we ask for writing samples to be produced in one or two sittings, what we get is a very specialized form of writing, a kind of writing that is, first, not representative of what most students (and indeed most people) do most of the time, and, more seriously, not representative in that it is more limited, engaging the writers superficially, demanding relatively little intellectual engagement in, and personal commitment to, the writing task. That such writing is not representative is due not to a possibly poor choice of topic, but rather to the very conditions of the assignment. Writing done in such a controlled context implies a composing process that is radically different from the process each of us undergoes in the course of our normal

writing, and certainly different from that described by those professional writers who report on their own experiences. And surely the differences in the process have implications for the product. To understand the nature of these possible differences, it is worthwhile contrasting the description of the composing process developed by those working in creativity theory and confirmed by the introspective analysis of established writers with the process necessitated by the conventional experimental situation.

Analysts of the creative process such as Wallas, Young, Becker, and Pike, and Winterowd always distinguish several distinct stages in the process, including at least the following: preparation, incubation, illumination, and verification (or revision, when the process is composing).[1] The first phase, the preparation, is a time of intense conscious, deliberate exploration; the length of this initial period is determined by a number of factors, such as the nature of the subject matter, the writer's past exposure to and exploration of the topic, as well as the writer's own cognitive style. The typical experimental situation allows for very little of this preparatory activity, and not just because of the time constraints imposed. In her study of the composing processes of traditional and remedial adult writers, in a controlled setting, Sharon Pianko reported that the mean prewriting

time for the traditional group was 1.64 minutes and for the remedial group 1.00 minutes.[2] What makes these figures so surprising is the fact that the students were given the entire afternoon in which to compose. Perhaps the very fact of having to write on an imposed topic in such a highly artificial situation militates against the kind of active engagement with the topic that seems to be necessary for truly creative writing.

And if the initial preparation is truncated in the experimental context, what happens to the incubatory period? Creative figures in many disciplines--scientists, mathematicians, as well as poets and prose writers--all insist on the necessity of this fallow period, where our conscious mind suspends its activity, presumably allowing the unconscious to do its work. Such a withdrawal of consciousness is hardly possible in a room filled with other students engaged in the same task and in the company of a researcher with an eye on the clock, no matter how long the time allowed for the writing.

And what of the final stage of the writing, the verification or revision, especially the kind of inventive revision identified by Don Murray and Nancy Sommers as characteristic of able writers?[3] Both Murray and Sommers describe a process in which writers circle towards their meaning through successive drafts, focusing in each draft on a different aspect of the whole until the final piece is complete. Many such cycles may be required to remold a

piece of writing in order to make the writing accord both with our sense of what we want to say as well as our sense of how that meaning can best be conveyed to the relevant audience.

In short, all that we know introspectively about the writing process as well as all that we are learning from creativity theory and from studies of the composing process by researchers such as Sommers and introspective artists such as Murray suggests that writing is more than a one-session process.

This is not to say that we can't write in a single session, or at least that our students can't. They can and do, again and again -- for experiments, for tests, and (unfortunately) frequently as standard classroom writing practice. The question is what kind of writing is produced under such constraints: clearly the kind of writing that <u>can</u> be produced under such constraints, where the preparation has been accomplished well before the assignment was given, where the writing itself is not a means of coming to insights but rather a way of communicating old formulae, the kind of safe and easy writing bemoaned by Janet Emig in her description of Lynn in <u>The Composing Processes of Twelfth Graders</u>.[4] That kind of writing was not what we had in mind for our research. What we wanted to look at was writing where the writer was engaged intellectually, where there was at least an attempt to move from a personal recogition

of an intellectual problem to a final clarifying insight. Fundamental to our research was a broader conception of writing, one which included the heuristic power of the process. At the same time, we wanted to look at the writing students do in fact do. For college students at least, this is decidedly not what is usually demanded in the conventional experimental situation.

Our solution was simple: to select essays students had written as part of their course assignments, but outside the classroom. Such essays have two advantages: first, they are typical of the writing most students do most often, second, they entail far more intense intellectual engagement in the process than the conventional one-session assignment, and consequently involve the students in a composing process more consistent with that described in creativity theory and confirmed by the practice of established writers. A high school or university essay demands an intense preparatory exploration period and, although there is always a deadline, it allows enough time for preparatory exploration and for an incubatory period afterwards. (The revision stage, admittedly, is frequently truncated, if not omitted.)

Furthermore, although the kinds of writing tasks assigned in high school and university courses can be hackneyed and artificial in their own way, they do not suffer from the additional artificiality entailed in the conventional experimental assignment where students are

asked to write for writing's sake. The essays we examined all had a clear goal for the writers beyond the display of writing ability.

And finally, as it turned out, in selecting from class-assigned essays, we were able to achieve as high a degree of uniformity in mode, and to a large extent in topic, as we would have had if we had assigned topics experimentally. The papers in all disciplines were, in Kinneavy's terms, referential, and of the three referential aims, were directed specifically towards proving a thesis.[5] Further, at least in the case of the English literature papers, the topics assigned across classes and across grades were remarkably similar in the kind of thinking and the kind of writing demanded. The same kind of literary analysis was implied by each topic, although, as we shall see, it was not produced by all students at all levels.

In the end, then, the papers collected for our analysis were last-year high school and third-year university essays, written in four disciplines: English literature, history, geography, and biology. For each level, in each discipline, three different instructors were approached and asked to collect a sample of essays to represent the range of student writing in their class; this sample was defined as 2 A's, 2 B's, 2 C's, 2 D's, and 2 F's, where possible. In some cases, the intructor had not given the grade of D or had only given one F in a particular class, and so we did not

always receive exactly 60 papers for each discipline.

To analyze and compare the writing thus collected, we developed and tested several instruments, in the end settling on three to determine some of the indices of growth: a syntactic instrument (the results of that analysis will be reported elsewhere); a rhetorical scale; and a cognitive measure.

Originally we intended to apply as well a moral scale, based on Lawrence Kohlberg's conception of moral development,[6] and much like the instrument used by Wilkinson in Britain and Miller in her research conducted at Ohio State.[7] Kohlberg argues that individuals go through successive stages of moral growth, from a preconventional, through a conventional, and to a post-conventional phase. However, we found in some exploratory testing with academic History papers that this measure was for the most part not relevant for the writing we were looking at, unless it was interpreted so broadly that it became indistinguishable from a cognitive measure. These discipline-specific college and university essays did not lend themselves to classification according to level of moral development. This may in itself be a comment on school writing. In fact, in those cases where such a measure could be used meaningfully, we discovered an inverse correlation between moral level on the one hand and on the other cognitive and rhetorical performance, and also evaluation by the marker. At the same time, it was

clear that one could not infer from the writing sample what the student's real stage of moral development was; rather, in basing their arguments on low-level moral grounds, the students seemed to be accommodating to what they considered to be the stance of the discipline, at least as it had been represented by their professors. Our tentative conclusion, based on this very small sample, was that moral issues are irrelevant in academic History papers, or at least, that the level of morality introduced in historical discussion is what Kohlberg would classify as very low indeed.

While these attempts at moral analysis were abortive, all the essays proved amenable to analysis by the rhetorical and cognitive instruments. Both can be illustrated through a discussion of the analysis of the 52 high school and university English essays in the sample.[8] The raters for both scales were English graduate students who had had at least one year's experience teaching in a writing lab. After an initial training period, each rater evaluated the essays separately, and the scores were later correlated to determine inter-rater reliability.

The rhetorical instrument developed for the pilot study is what Charles Cooper has called a "holistic analytic instrument":[9] a set of criteria are specified, and each rater evaluates the whole paper according to each of these criteria, in this case on a scale of 1 - 10. The criteria specified on the rhetorical instrument included, originally,

the following: unity, organization, development (that is, use of supporting detail), overall stylistic effectiveness, register (degree of formality), vocabulary range, vividness, economy and coherence. Each of these criteria was described for the raters by defining precisely every second point on the 1 - 10 scale. (The scale had originally been a five-point one, but the raters preferred the extra flexibility given by doubling the range.) So, for example, the criterion "development" was defined as follows:

> 1,2 The paper remains a skeleton, with no concrete details to support its sweeping generalizations; or what illustrations, etc., it does use do not actually support the generalization.
>
> 3,4 The paper has made use of some appropriate examples, illustrations, etc., but these are only occasional and not always relevant or convincing.
>
> 5,6 There is a fair amount of supporting detail; at the same time a fair number of generalizations are without any support and perhaps some of the details are not entirely relevant.
>
> 7,8 Generally speaking, sufficient concrete and appropriate material fills out the skeleton structure with only the occasional lapse.
>
> 9,10 The development is full, appropriate and satisfying, creating an impression of thoroughness.

This kind of rhetorical instrument is a conventional one. It is based, broadly, on the well-known Diederich instrument of evaluation and is similar to many other such measures used widely.[10] What makes such an instrument familiar to most of us, however, is that these criteria are

drawn from the conventional wisdom about composition that has been current in the last century. They represent a distillation and compilation of the precepts for writing formal expository prose found in most conventional rhetorics and based on that kind of composition teaching which Richard Young has called "current-traditional rhetoric."[11] Given that the focus of such teaching has been on an analysis of the product, such a description of the features of successful expository prose can be very useful for purposes of evaluation and measurement, whatever its limitations pedagogically. In our study, this "current-traditional rhetorical" instrument was used primarily to reveal how closely students were able to accommodate their writing to the norms of formal expository prose and to indicate whether there was a growth in such rhetorical ability over the years.

At the same time, we recognized that such analysis, like the conception of composition it implies, is limited. "Current-traditional rhetoric" ignores all those aspects of the process that seem to its proponents to be unteachable, and consequently presents a limited conception of the process. It is precisely those aspects which are ignored in conventional accounts of composition that we were particularly interested in investigating, for example those features relating to the complexity of the task undertaken and indicating thus the nature of the intellectual processes of the writer.

As one potential index of such growth, we chose to look at the levels of abstracting, or rather the students' capacities for abstracting as revealed in the writing. Since the term, if not the measure, is similar to that used in other studies, it is necessary to define more precisely what we were investigating. First, this instrument must be distinguished from that used by Dilworth et al, who categorized the abstractness of different samples of student writing by evaluating each T-unit according to its degree of abstractness, using three categories:

> Statements at a low level of abstraction are those which make no explicit inferences or judgements. Physical descriptions, statements of objective fact and restatements of the literal circumstances of the poem are characteristic of this level. Statements at a high level of abstraction are those which propose principles or generalizations concerning life at large. Those T-units not obviously classifiable as either low or high abstractions were tabulated as moderate abstractions.[12]

The instrument used in our research was radically different in conception. First, it was the discourse as a whole that was categorized, not the individual units (whether sentences or T-units). Each essay was given a global rating with respect to this criterion. Second, this rating was not based on the abstractness of the diction or the abstractness of individual propositions, but rather on the student's capacity to abstract as revealed in the essay: the degree to which the primary data dealt with in the essay had been classified, ordered, and integrated by the writer within some superordinate hierarchic conceptual

pattern. The scale was intended to measure the writers' ability to abstract from and conceptualize about their primary material, and for this reason the word "abstracting" rather than "abstraction" was used to define the instrument.

An essay might indeed sound very abstract, it might consist of many generalizations and abstract propositions, but unless the generalizations grew out of the particulars dealt with in the paper, unless the abstracting had been performed by the writer, the essay could not be highly judged according to our scale.

The scale was developed from the one used in the Britton et al research project,[13] which was itself based on James Moffett's levels of abstraction.[14] The three models are similar and yet different in fundamental ways; figure 1

Insert Figure 1 about here

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highlights some of these contrasts. For Britton and Moffett, the first level of the scale is record, a first-hand account of things and events in the writer's immediate environment, described in the present tense.[15] Since we found no instances of such writing in our sample (the Britton team found only rare instances), we dropped that category from our scale for practical, though not conceptual, reasons. The first level on our scale is the second on the Britton and Moffett scales, report, the retrospective presentation by the writer of the events or scenes or data dealt with. The principle of organization is chronological or spatial, not logical.

Our use of the category of report differs significantly in one respect. For Moffett and Britton et al., report deals only with particular observable events and scenes rather than any generalizations about them. In our use of the term, a report may deal with whatever material is required by the writing task. For a specific assignment, a student may be required either to comment directly on experience, or to comment on a literary work (which is itself an abstraction from experience) or to comment on a set of generalizations about experience - a literary theory, for example. Similarly students in other disciplines may be asked to survey the literature about a historical event or look at the phenomena or test the theories surveyed against the phenomena. In these latter instances, the initial confrontation with experience and the wresting of or formulation of the generalization about experience have been performed by another, and it is the student's task only to deal with the generalizations rather than the experience. Clearly, repeating another's generalizations about experience is a very different task from perceiving and formulating these generalizations oneself. What we were interested in getting at in our analysis of these students' writing was not only the level of abstraction from experience that the essay was operating on, but also the degree to which the students had themselves formulated these abstractions. In other words, we wanted some measure

of the number of rungs up the ladder of abstracting that the students themselves had climbed, as evidenced in their writing.

On the other hand, the difference in the nature of the primary data may itself be an index of the difficulty of the cognitive task, and so it was necessary to introduce a second variable classifying the "données" or the base material of the assignment from which the student is required to abstract. For the purpose of this study, it was sufficient to distinguish four categories of données, although clearly other categories might be relevant in dealing with other kinds of writing. The four categories are: experience, although only certain rare biology assignments were based directly on experience; experience as structured in the lab (by experiments); a literary object, which has its own internal order that is not the order of discursive thought; and classifications, whose internal order is the order of logic or discursive thought.

There are some important questions raised by this kind of classification concerning relative cognitive difficulty as determined developmentally. Is it in fact more difficult to abstract from experience, to impose the order of thought upon material which is not apparently so structured, than to abstract from classifications, from données whose internal order is already the order of logic and discursive thought? If so, at what stage does it become easier? The answer may

be very different for a child who has just entered the Piagetian stage of formal operations. These are questions that need to be answered but that lie outside the immediate province of our research.

To return to the scale. Report summarizes the données using a chronological or co-ordinate pattern of organization. In analysing their scripts, the Britton team felt they needed more categories between Moffett's classificatory and his theoretical, and we in turn found we needed a further category not distinguished by either of them--a category we have called commentary. The organizing structure is still that of report, but there are as well occasional or frequent generalizations. For example, in a literary analysis the plot summary may be punctuated by interpretative generalizations, but such generalizations are in no way interrelated or integrated with each other, nor do they impose any organization upon the presentation of the material.

At the next level, these generalizations themselves organize a body of data, and, for sections at least, the presentation in the text is structured by the logical order of discursive thought and argumentation rather than the co-ordinate and chronological structure of the previous levels. In a literary essay, for example, this stage might be represented by a character analysis in which a dominant trait is identified and the instances from the text

marshalled to support this generalization according to their relevance within this classification rather than their occurrence in the text. Such an analysis might either comprise the whole of an essay or be part of a longer essay in which a series of such logical units are themselves presented one after the other.

The next level, "second-level classification," includes classification of classifications, and generalizations about generalizations. The conceptual units themselves are ordered under one larger conceptual framework, relating character development and imagery and action, for example, to some thematic unity. And so on. Higher and higher levels of abstracting are possible as the writer can, for example, compare works, discuss the author's whole oeuvre, compare authors, periods, etc.

Although our discussion of it focusses on the English essays, the scale was in fact developed in part in response to the data offered by all the essays collected, and proved to be easily applied to all of them.

As previously described, each essay was rated by two independent raters and the scores on these ratings were correlated using the Pearson product-moment correlation statistical procedure. Following convention, we used .80 as our standard of adequate reliabi ity. Inter-rater reliability for level of abstracting was well within that range; however, several of the criteria on the current-traditional rhetorical scale had lower coefficients. Where

the correlation did not reach .65 (as occurred with the criterion "sentence structure"), that variable was excluded from further analysis; where the correlation lay between .65 and .80 (as occurred with "overall style," "range of vocabulary," "vividness," and "economy"), we performed some further analysis but with great caution and with a disinclination to place too much confidence in any conclusions that could be drawn from such data. Where findings based on these criteria are included in this report, they will be marked with two asterisks to indicate such lack of confidence. It is on those criteria for which inter-rater reliability surpassed .80 that most of our analysis will be based. These include, besides level of abstracting, "unity," "organization," "development," "register," and "coherence."

Once the scores were tabulated, a number of statistical tests were performed on the data, with the aim of correlating performance on the various scales first with grade and then with level, that is high school or university. The first finding was that, for the entire sample as well as for each level separately, the rhetorical criteria all correlated highly with grade. The following table summarizes the

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Insert figure 2 about here

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results for the sample as a whole. Further, the Scheffé test revealed that the A's particularly stood out as a separate subset, differentiating themselves significantly from other grades in their ratings on each of the rhetorical criteria.

Finally, we used multivariate regression analysis in order to determine which of these rhetorical criteria are most important in determining grade, holding the others constant. And we discovered that of all these criteria, the one that was by far the most significant factor (t-statistic of 7.3) was development, the use of supporting detail. In part this justifies the constant injunction of the composition teacher to be specific and concrete. However, the degree to which this is a factor and the amount of supporting detail that is rewarded raises questions about the extraordinary importance of this criterion. Analysts of discourse have pointed out that too much explicitness can be as negative as too little in most rhetorical transactions. One wonders whether it is possible to have too much substantiation in formal academic discourse, and if not, why not?[16] Surely this relates to the nature of this very complex and artificial transaction in which our students are engaged when they write an academic essay. On the one hand, to use Kinneavy's taxonomy again, their aim is referential and they are concerned to prove a point about reality; to satisfy this goal, they need to bring in only enough evidence and detail to make their case logically complete. On the other hand, however, there is a hidden agenda in most essays, what Kinneavy calls the persuasive aim, which is to convince the instructor that they have mastered the course material and that they know what they're talking about. Part of this detail then is to

support the Aristotelian "ethical" argument, in which the writer must establish his credibility as an authority; and perhaps the issue is simply that students need to provide a great deal of evidence in order to establish these credentials.

At all events, whatever the reasons, development proved the most significant factor in determining grade although in simple correlations with grade all the other rhetorical criteria correlated directly as well. In contrast, there was no significant relationship between level of abstracting and grade. In fact, a glance at the distribution of grades and levels of abstracting reveals some surprising phenomena: although the highest level of abstracting for the A's was 6, there were essays with lower grades (B and C) which achieved an 8 on the scale. What these English instructors rewarded when they assigned grades did not apparently have a great deal to do with the intellectual complexity of the students' handling of the task set.

When the rhetorical and cognitive criteria were correlated with <u>level</u>, however, there was an interesting reversal. First, there proved to be no significant correlation between

level and any of the rhetorical criteria except, interestingly, register. Thus the university essays are no more unified or organized, no more fully developed, no more coherent than the high school essays. They do not satisfy the norms of expository prose any more successfully except according to that single criterion, the level of formality of the diction.

In contrast, the level of abstracting did correlate significantly with level. Students writing university essays abstracted to a significantly higher level than did last year high school students.

There may be a direct relationship between these two phenomena--the seeming lack of growth in rhetorical control and the growth in the capacity to abstract to higher levels. Because a cognitively more difficult task is being undertaken, the rhetorical skills are being taxed further.

The breakdown of rhetorical and grammatical skills that accompanies attempts at more complex tasks has been observed by a number of researchers and theorists. Miller noticed this phenomenon when she assigned her freshmen a task that involved their attempting to move on a moral plane above the one they normally operated on.[17] In a study of the writing of students in grades 7 and 8, Pringle and Freedman found that the rhetorical control as well as the mastery of the conventions of standard written Canadian English were significantly weakened when students wrote in a different

mode (argumentative instead of narrative) and on an abstract rather than a concrete topic.[18]

And in his article, "The Politics of Composition Research," Richard Lloyd-Jones has commented on that same phenomenon: "As one's intellectual reach is extended, one's once-adequate writing is no longer sufficient. The larger one's experience, the more the old skills with language have to be reworked to fit new circumstances."[19]

The fact that there has been no growth in rhetorical skills thus relates directly to the increasing complexity of the writing tasks engaging these students. It is quite simply more difficult to write when the task is more intellectually taxing. That these students have as much rhetorical control as they do at third year university actually suggests a growth in such control.

What then are we to make of the correlations with grade? The mark given by the instructor correlated directly with performance on each of the current-traditional rhetorical criteria, but not with the level of abstracting, the cognitive index.

That English teachers respond most to the rhetorical features is not surprising, given their own training and the association of these criteria with traditional composition teaching. It is understandable that those who are products of such teaching should evaluate according to its precepts. As a result of their immersion in current-traditional

rhetoric, most instructors have internalized an evaluative scheme which rewards such qualities as unity, organization, development, coherence, appropriateness of register.

What has not been internalized, because traditional composition teaching ignored this dimension, is a set of criteria for evaluating such cognitive features of the writing as the levels of abstracting attempted by the writer. This is all the more disturbing since our analysis shows that level of abstracting does correlate significantly with level of education and thus seems to be an index of growth. In evaluating their students' writing, teachers seem to be looking horizontally across the grade without a vertical sense of each student's development, and certainly without a sense of the complex nature of such development, in which growth in one dimension may entail momentary awkwardness in others. The growing awareness of how writing abilities develop had not yet been assimilated into the evaluative structures of at least that body of teachers taking part in our study.

The problem with the "current-traditional" rhetorical framework within which these teachers seem to be operating is not just that much is omitted concerning the process of writing but that, as a result of these omissions, the nature of the whole is distorted. When teachers ignore the cognitive aspects of the process and focus only on the rhetorical features of the completed product, they ignore the

interrelationship between the intellectual and rhetorical dimensions. As a result, they are not in a position to anticipate the kind of breakdown that occurs when the intellectual task is made more complex. Further, when they focus only on the rhetorical dimensions of the writing, they may actually impede the intellectual growth. In the end, no doubt, these intellectual skills will develop anyway. But the short-run effects of such evaluation are probably to encourage students to operate on the safe levels they have already mastered in writing their essays, not to venture further. In Emig's study, Lynn, the precocious twelfth grader, when given a choice of topics, chose to shy away from the personally difficult, to stay with the easy task. In this instance, safety meant personal psychological and perhaps metaphysical safety. The kind of evaluation which rewards performance according to rhetorical criteria and does not recognize intellectual leaps forward encourages students to take the same cautious stance in the intellectual sphere as Lynn did in the psychological.[20]

Such results point to the need for teacher re-education. The teachers in our sample seem to have absorbed very well the lessons of "current-traditional rhetoric" to the extent that they have totally assimilated its evaluative criteria. They need to know as well that writing involves more than the mastery of the norms and forms of expository prose as articulated in the traditional texts. They need to be introduced to

the broader conception of the writing process assumed in the "new rhetoric," a conception which recognizes the epistemic and cognitive dimensions of the process; beyond this, they need to recognize the fact of development and the fact that such development is not linear, that intellectual growth, for example, may involve temporary setbacks in rhetorical control.

These are the pedagogic implications of our preliminary findings. As to the implications for research, our study seems to indicate various directions for further work. The cognitive measure we developed, the "level of abstracting," was easily applied to all the discipline-specific writing we were studying and proved to be a significant index of growth. Other similar measures need to be developed to get at those features of writing which have typically been ignored--by researchers as well as teachers. Although the moral scale proved unsatisfactory as an index of growth, differentiation by discipline according to this or other such moral measures should prove very illuminating. And the interrelationships between the cognitive and rhetorical dimensions need to be studied further, preferably using case studies where the nature of development can be monitored more carefully and described more precisely. At the same time, evaluations according to the holistic analytic scales need to be supplemented by precise analyses of the rhetorical features of each text, using the tools of traditional rhetorical criticism as well as those employed in discourse analysis.

And beyond the intellectual and cognitive dimensions of the writing, psychological and affective growth need to be explored along the lines of the studies undertaken by Odell and Wilkinson.[21]

In short, a great deal of research is needed before we begin to understand the nature of writing development in the college years. What our preliminary findings suggest to us most strongly is that further study is necessary and that such study will be richly rewarded.

Levels of Abstracting	Britton et al.	Moffett
	Record	Record
Report (based on "Données"*)	Report	Report
	Generalized Narrative	
Commentary		
	Low-level Analogic	
1st Level Classification	Analogic	Classificatory
	Speculative	
2nd Level Classification	Tautologic	Theoretical

*Categories of "Données"
Experience
"Laboratory" Experience
Aesthetic Object
Classification

FIGURE 1

CORRELATIONS WITH GRADE

	Correlation Coefficient	r^2
Unity	.61	.37
Organization	.54	.29
Development	.80	.64
**Style	.63	.40
Register	.44	.19
**Vocabulary Range	.54	.29
**Vividness	.58	.34
**Economy	.49	.24
Coherence	.60	.36

In each case, $p < .001$

FIGURE 2

Notes

[1] Graham Wallas, The Art of Thought (New York: Harcourt, Brace and Co., 1926); Richard E. Young, Alton L. Becker and Kenneth L. Pike, Rhetoric: Discovery and Change (New York: Harcourt, Brace & World, Inc., 1970); W. Ross Winterowd, "Developing a Composition Program," in Reinventing the Rhetorical Tradition, ed. Aviva Freedman and Ian Pringle (Conway, Arkansas: L & S Books, in press).

[2] Sharon Pianko, "Description of the Composing Process of College Freshman Writers," Research in the Teaching of English, 13, 1979, p. 13.

[3] Donald M. Murray, "Internal Revision: A Process of Discovery," in Research on Composing: Points of Departure, ed. Charles R. Cooper and Lee Odell (Urbana, Illinois: NCTE, 1978), 85-103; Nancy I. Sommers, "Revision Strategies of Student Writers and Experienced Writers," NCTE Convention, San Francisco, November 1979.

[4] Janet Emig, The Composing Processes of Twelfth Graders (Urbana, Illinois: NCTE, 1971), pp. 46-53.

[5] James L. Kinneavy, John Q. Cope, and J. W. Campbell, Aims and Audiences in Writing (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976).

[6] See, for example, the development of these concepts in Lawrence Kohlberg, "From Is to Ought: How to Commit the Naturalistic Fallacy and Get Away With It in the Study of Moral Development," in Cognitive Development and Epistemology, ed. T. Mischel (New York: Academic Press, 1971), pp. 151-235.

[7] Andrew Wilkinson, "Assessing Language Development: The Crediton Project," Conference of the Canadian Council of Teachers of English, Ottawa, Canada, May 1979; Susan Miller, "Rhetorical Maturity: Definition and Development," in Reinventing the Rhetorical Tradition, ed. Aviva Freedman and Ian Pringle (Conway, Arkansas: L & S Books, in press).

[8] There were 25 high school essays and 27 university essays analysed.

[9] Charles R. Cooper, "Holistic Evaluation of Writing," in Evaluating Writing, ed. Charles R. Cooper and Lee Odell (State University of New York at Buffalo: NCTE, 1977), pp. 3-31.

[10] Paul B. Diederich, Measuring Growth in English (Urbana, Illinois: NCTE, 1974).

[11] Richard E. Young, "Paradigms and Problems: Needed Research in Rhetorical Invention," in Research on Composing: Points of Departure (Urbana, Illinois: NCTE, 1978).

[12] Collett B. Dilworth, Jr., et al., "Language Structure and Thought in Written Composition: Certain Relationships," Research in the Teaching of English, 12, 1978, p. 99.

[13] James Britton, et al. The Development of Writing Abilities (11-18) (London: Macmillan Education Ltd., 1975).

[14] James Moffett. Teacning the Universe of Discourse (Boston: Houghton Mifflin Company, 1968).

[15] For Britton's description of the categories, see pp. 94-98.

[16] As further corroboration of this point, the regression analysis also revealed a marginally significant (t-statistic of 1.95) negative relationship between economy and grade--that is, holding the other variables constant, the less economical the essay, the higher the grade.

[17] Miller. "Rhetorical Maturity."

[18] Ian Pringle and Aviva Freedman. "The Carleton Writing Project, Part 1: The Writing Abilities of a Selected Sample of Grade 7 and 8 Students." Report prepared for the Carleton Board of Education, October 1979.

[19] Richart Lloyd-Jones, "The Politics of Research into the Teaching of Composition," College Composition and Communication, 28, 1977, p. 220.

[20] Emig, pp. 48-73 passim.

[21] Lee Odell, "Redefining Maturity in Writing", Conference of the Canadian Council of Teachers of English, Ottawa, Canada, May 1979; Wilkinson, "Assessing Language Development."